

M-12013 US
10/085,682

IN THE SPECIFICATION

Please replace the paragraph beginning on page 13, line 15 with the following replacement paragraph:

In one embodiment, an alloy of Sb, In, and Sn is used as the phase-change material, and the reflectivity of the amorphous portion is $18.2\% + 3\%$, while the reflectivity of the crystalline portion increases to $29.5\% + 3\%$. One additional property is that the optical phase shift (due to changes from both optical constants and physical structure) is constructive with the grating effects of the land/groove structure. When writing on the lands, as compared with writing on the grooves, the optical phase shift results in an effectively shallower groove. This yields a higher reflectivity of written portions on lands and a higher contrast between the written-to and unwritten portions. Consequently, the optical system receives higher reflected signal amplitudes, thereby improving system performance. Additional details of the effects of the grating structure and phase-change material are disclosed in commonly-owned U.S. Pat. Appl. Serial No. 10/056,927 UNKNOWN, entitled "Use of Mother Stamper for Optical Disc Molding", bearing Atty. Docket No. ~~M-11628-US~~, filed January 24, 2002, which is incorporated by reference in its entirety. Note that the writable portion is "write-once" because, once written, the crystalline portions cannot be returned to the amorphous state.

Please replace the paragraph beginning on page 16, line 25 with the following replacement paragraph:

A protective layer (not shown), such as silicon oxide, silicon nitride, or silicon oxynitride (with a process-adjustable index of refraction between 1.6 and 2.0 at 650

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nm), can then be deposited over the data layer, such as by DC or RF sputtering. Commonly-owned U.S. Pat. Appl. ~~Serial~~ No. 09/854,333, entitled "Optical Data Storage with Enhanced Contrast", filed May 11, 2001, which is incorporated by reference in its entirety, discloses forming a SbInSn layer and a protective layer on the disc. The protective layer has a thickness ranging from about 54 to about 58 nm, with a typical thickness of 56 nm \pm 3%. The lands have a typical height of 85 nm, with a range of 80 nm to 90 nm, and a typical width of 540 nm, with a range of 520 nm to 560 nm. These values are measured at full-width half-height, and include the molded feature, the phase-change material, and the protective layer.

Please replace the paragraph beginning on page 18, line 3 with the following replacement paragraph:

It should be noted that although the description refers to a single data layer on a side of the optical disc, two data layers on a side are also suitable, such as disclosed in commonly-owned U.S. Pat. Appl. ~~Serial~~ No. 09/764,042, entitled "First-Side Dual-Layer Optical Data Storage Disk and Method of Manufacturing the Same", filed Jan. 16, 2001, now abandoned and incorporated by reference in its entirety. Commonly-owned U.S. Pat. Appl. ~~Serial~~ No. 09/560,781, entitled "Miniature Optical Disk for Data Storage", filed Apr. 28, 2000 and now abandoned, incorporated by reference in its entirety, also discloses a method of manufacturing a first-surface disc.

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Please replace the paragraph beginning on page 18, line 16 with the following replacement paragraph:

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Discs according to the present invention can be formed using mother stampers, such as disclosed in the earlier referenced U.S. Pat. Application No. 10/056,927 bearing ~~Atty. Docket No. M-11628-US~~. Using the mother stamper, optical discs are produced by placing the stamper in a mold cavity of an injection molding press and injecting molten plastic into the mold. The resulting molded discs have an imprint of the stamper. The molded discs are then coated with a phase-change material or a variety of other thin films (e.g., reflective layers, active layers, overcoats) depending on their type. The molded discs can be coated by a variety of methods, such as sputtering, spin coating, and chemical vapor deposition (CVD). Manufacturers of optical discs include Ritek of Taiwan, Sony of Japan, Matsushita of Japan, and Imation of Oakdale, Minnesota.

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